Translated from: Probiotikum gegen Verdauungsbeschwerden in der Schwangerschaft. Hannes Hofmann, Gynäkologie & Geburtshilfe, 26.11.2015

- Benefit for pregnant women: Probiotics significantly **reduce frequency of flatulence and constipation** in the last months of pregnancy.
- Benefit for newborns and infants: Specific intestinal synbiotics for the **preventive treatment of 3 month colic**.
- Probiotic bacteria significantly **reduce diseases of the allergic spectrum** – confirmed multiple times in clinical studies.

Study results on multi-species synbiotics

Probiotics for indigestion in pregnancy and infant colic

Indication-specific bacterial cultures reduce the rates of allergic diseases as confirmed repeatedly in various clinical studies: Probiotics provide significant protection against atopic dermatitis, where the results are achieved when the intestinal synbiotics are administered pre- and postnatally (Panduru, 2015). The multi-species synbiotic Omni Biotic® Panda was developed to treat allergic diathesis in high-risk children. A double-blind, placebo-controlled, randomized study with 156 infants showed a significant effect on the incidence of atopic dermatitis (Niers, 2009). The responsible mechanism of action is the regulation of the immunological TH1 and TH2 balance by specific bacterial cultures.

Study design: familial predisposition frequently present

To generate additional scientific findings on this synbiotic, a clinical investigation was conducted at the Department of Gynaecology and Obstetrics at the State Hospital of Feldbach-Fürstenfeld from June 2012 to August 2015 under the direction of Prim. Univ.-Doz. Dr. Hannes Hofmann. In this study, Omni Biotic® Panda was made available to 148 pregnant women and their infants over a period of 6 months. The participating mothers filled out a questionnaire during the last 2 months of pregnancy and the first 4 months of life of the newborn on a daily basis. The following primary endpoints of the study were defined:

1. Pregnant women: Impact of probiotics on the incidence of constipation and flatulence during the last two months of pregnancy
2. Infants: Occurrence of 3-month colic

In this sample, 61.9% of infants were genetically predisposed to allergic diseases in at least one expression. For indigestion, the prevalence indicated by the pregnant women was 57.7%; especially frequent was a predisposition to 3-month colic (36.7%), recurrent diarrhoea (13.5%), (chronic) constipation (10.4%), and irritable bowel syndrome (8%).
In diseases of the allergic spectrum, familial predisposition increases the risk of the newborn developing atopic disorders by up to 35% if a sibling is already affected, and up to 40% if a parent suffers from such complaints. Multiple occurrences within the family results in a risk of up to 80% (Borowski, 2005). The infants investigated in the study had familial predispositions of allergic rhinitis (45.9%), eczema (44.1%), food allergies (30.1%), rhinitis (28.3%), and asthma (16%).
The probability of 3-month colic is generally about 30% (Ståhlberg, 1984), and genetic predisposition increases this. Furthermore, the mode of birth affects this risk (Dominguez-Bello et al., 2010). In this study, 35.9% of the children were born by Caesarean section. This value lies above the Austrian average of 28.8% (Macfarlane et al., 2015).

Prim. Univ.-Doz. Dr. Hannes Hofmann
Department of Gynaecology and Obstetrics, Feldbach-Fürstenfeld State Hospital

Study results: Intestinal synbiotics show great effect

Pregnancy: Women suffer from constipation at the end of pregnancy in up to 40% of cases (Marshall et al., 2010). According to the definition of less than 3 bowel movements per week (Hasenöhrl, 2014), only 2.4% of the women studied in this investigation had constipation at the end of the pregnancy. This value lies significantly below the accepted reference value (40%); it shows a significant improvement in constipation symptoms over time.

Flatulence likewise occurs in up to 40% of women at the end of a pregnancy (Rath, 2010). In this indication as well, the percentage of women with flatulence decreased significantly over time in this study. Shortly before the birth of the child, only 5.28% of the investigated pregnant women suffered from flatulence.

Newborns: Significant correlations between the frequency of flatulence, cry duration, and diarrhoea were shown in the investigation. These three variables are accepted here as indicators for 3-month colic. In the centre, cry duration was measured in minutes per day. Excessive crying was defined by at least 3 times per week and more than 180 minutes per day. Figure 1 shows the time sequence of the mean cry duration of the investigated infants. This decreases significantly in the course of time. During the administration of Omni Biotic® Panda, the infants did not achieve the typical cry duration for colic of 180 minutes per day.

Only 4.90% of the investigated children showed the characteristics of excessive crying (3-month colic) (see Fig. 2), while the general rate of prevalence is up to 30% (Ståhlberg, 1984).

Children who have a predisposition to disorders of the digestive system or colic showed no statistically significant higher probability for excessive crying or colic in this investigation.

In a previous evaluation of Omni Biotic® Panda in acute gastrointestinal colic (Institut Allergosan, 2014, n = 66), taking the probiotic already resulted in an improvement of complaints in 43.9% of the babies within the first 5 days, and in 82.5% within 3 weeks; 91% of the mothers assessed the effect as good or very good.

CONCLUSION: The current study clearly shows that specially developed multi-species probiotics provide relief to expectant mothers from flatulence and constipation during pregnancy and for infants in 3-month colic and digestive disorders (diarrhoea, flatulence). ■

Literature:
- Borowski C., Schäfer, T. (2005): Allergieprävention – evidenzbasierte und konsentierte Leitlinie [Allergy prevention – evidence-based guidelines by consensus]. Munich: Urban und Vogel GmbH
- Dominguez-Bello M. G. et al.: Delivery mode shapes the acquisition and structure of the initial microbiota across multiple body habitats in newborns. In: PNAS, Proceedings of the National Academy of Sciences of the United States 2010; 107 (26)
- Hasenöhrl N.: Aktuelles: Neue Leitlinie zur chronischen Obstipation [New guidelines for chronic constipation]. Published in Journal für gastroenterologische und hepatologische Erkrankungen 2014; 12 (1): 28–29
- Macfarlane A.J. et al.: Wide differences in mode of delivery within Europe: risk-stratified analyses of aggregated routine data from the Euro-Peristat study. In: BJOG: An International Journal of Obstetrics & Gynaecology 2015. Online unter: http://onlinelibrary.wiley.com/doi/10.1111/1471-0528.13284/full
- Marshall, Kathleen et al.: Incidence of urinary incontinence and constipation during pregnancy and postpartum: survey of current findings at the Rotunda Lying-in Hospital. In: British Journal of Obstetrics and Gynaecology 1998; 105: 400–402
- Niers L. et al.: The effects of selected probiotic strains on the development of eczema (the PandA study). Allergy 2009; 64: 1349–1358
- Panduru M. et al.: Probiotics and primary prevention of atopic dermatitis: a meta-analysis of randomized controlled studies. J Eur Acad Dermatol Venereol 2015; 29: 232–42
- Rath W. et al. (2010): Geburtshilfe und Perinatalmedizin, Pränataldiagnostik – Erkrankungen – Entbindung [Obstetrics and Perinatal Medicine, Prenatal Diagnostics – Diseases – Labor]. Stuttgart, Georg Thieme Verlag
- Ståhlberg, Marja-Riitta (1984): Infantile colic: occurrence and risk factors. In: European Journal of Pediatrics 1984; 143: 108–11

Fig. 1: Cry duration of newborns in the context of taking probiotics

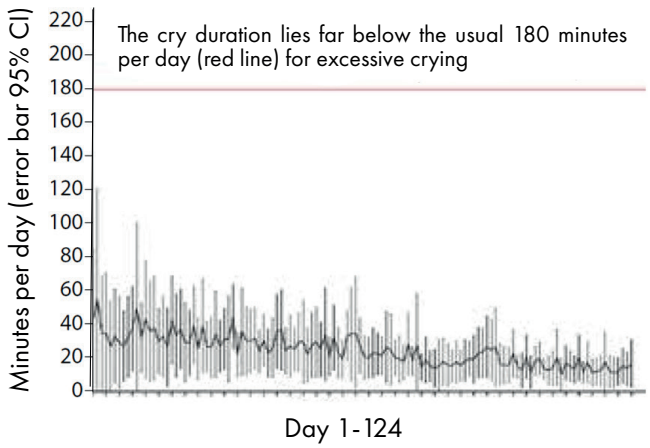

Fig. 2: Reduction of the occurrence of early childhood colic by the probiotic